

SAN ANTONIO

SIGGRAPH

≡ 2002 ≡



SAN ANTONIO  
**SIGGRAPH**  
2002

***The Demo Scene***  
***- Present state -***

**Theo Engell-Nielsen**  
**h y b r i s / NEMESIS**



# *The Present Scene*

## **How does a scener look like?**



*A typical scener (completely chosen at random) , aged 16 years*

# *The Present Scene*

## **Who is Theo Engell-Nielsen?**

- I knew zero page upcodes on the Commodore 64 by heart before I could say “Hello, my name is Theo” (in *English*, my mother tongue is Danish).
- At age 16 spent about 3 hours each day programming an Amiga 500 in M68000 assembly language.
- Have won three 1st prizes at The Party (among others). *Boasting is important to most sceners :-)*
- PhD studies are on CGI fire and explosions.

# *The Present Scene*

## **What does it take to be a scener?**

- Today demos can be huge, complicated projects at almost any scale.
- The technical bits and pieces are not getting fewer.
- All kinds of contributions in a demo group are needed, mainly *graphics (2D & 3D)*, *music* and *code*.
- As it has always been: It takes a lot of hard work, and then some, to be(come) a recognized scener.

# *The Present Scene*

## **What are demos used for?**

- Demos are still 100% show off!
- Demos are still released at demo parties (formerly known as “copy parties”).
- The demos compete against each other and the sceners vote for the best productions in each of the categories.
- The winners get all the glory, and that is what it is all about *(and the prize money, of course).*

# *The Present Scene*

## **What is The Scene today?**

- **What it has always been!**
  - Driven by enthusiasts.
  - Full of energy.
  - Very innovative - “you saw it first in ...”
  - Constantly evolving.
  - Thrives on technology (and pushes it too!).
  - ... but time changes everything anyhow...

# *The Present Scene*

## **Types of demos today**

- **Intros**

- Size limited to 256 bytes, 4Kb, 16Kb or 64Kb.
- 4Kb+ usually features sound.
- Usually features tech-oriented effects
  - faster, bigger, better, more, etc.
- Should be able to run on a “normal” PC (running Windows or Linux) or an Amiga.

# *The Present Scene*

## **Types of demos today (2)**

- **Demos**

- Maximum size is from 8MB to 30MB
- Three general categories
  - Visual orientation (*touchy feely demos*)
  - Funny or story driven (*you see these from time to time*)
  - Tech oriented (*a dying species*)
  - Combinations
- Should be able to run on “normal” PCs, on Windows or Linux, or Amigas. C64 demos actually have their own category.

# *The Present Scene*

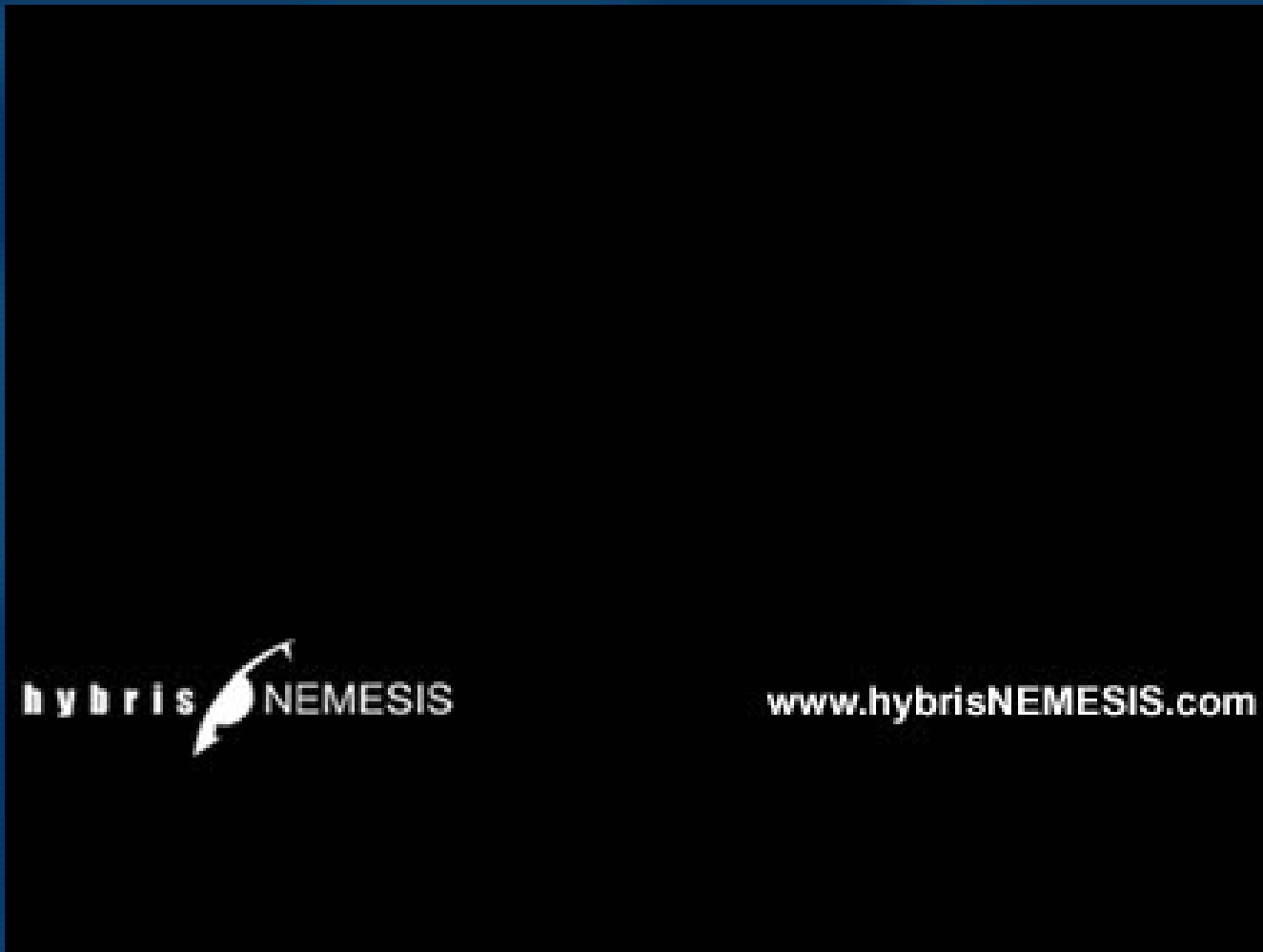
## **Types of demos today (3)**

- **WiLD!demos**

- A demo that runs on unusual equipment: PDAs, old computers (VIC20, ZX Spectrum), Macs, etc.
- Video “projects” / Cut scenes
  - Short films - some have a story, others do not.
  - Usually 75% has to be computer generated to avoid “I just got this fancy fire-wired HandyCam” productions.
  - The better ones are actually CAF material.
- Anything wild really
  - A symphony played by a group of matrix printers...

*The Present Scene*

**WiLD!demo example “PIXOR”**



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## **Other kinds of compos**

- **Music**

- Tracked (C64 or Amiga music).
- Audio stream (mp3 or ogg format).

- **Graphics**

- Hand drawn (no scannings or collages are allowed). Usually divided into two categories “C64” and “Others”.
- Traced (raytraced or scanline rendered in a program, usually made with commercially available programs).

# *The Present Scene*

## **Music and sound**



- Was Amiga mod's, 4 channels, 22 KHz.
  - Extended to many stereo sound channels, 44 KHz.
- Today sceners use either mp3 or soft synths.
  - When using streams, the music has no longer limitations compared to other genres of music. Instrumentation, vocals, effects, etc. are the same.
  - Proprietary real-time soft synthesizers are getting popular.
  - Producing demo music today is no longer a simple task.

# *The Present Scene*

## **Code**

- **Lots of free helper libraries make is easier to enter The Scene.**
  - OpenGL, DirectX - high level 3D languages.
  - Most demos run on PCs w/Windows or Linux.
  - C++, assembly language or Java.
  - Specific utilities are very often developed.
  - GCC and MS Dev are the most popular compilers.
- **Demo authoring tools are emerging**
  - Demopaja.
  - Alambik.

# *The Present Scene* **Graphics**

- **2D**

- Drawings
- Textures
- Procedural texture generators are getting popular

- **3D**

- Pixel based (mode 13h, Old School rasterizing)
- Hardware accelerated
- Real-time raytracing
- Hybrids

# *The Present Scene*

## **But what changed then?**

- **Hardware now takes care of the low level stuff that sceners used to code...**
- **The Internet**
  - Made everything much easier
    - Exchanging ideas, tips & tricks
    - *Spreading* the demos
  - Turned The Scene into a global thing
    - Spread out from Northern Europe
    - We still need to see the ketchup effect in the US and Asia

# *The Present Scene*

## **Examples of demos**



*Scoopex, "Seven Sins" (1989, Amiga 500, 770 KB)*



*Farbrausch, "Das Produkt" (2000, PC, 64 KB)*

# *The Present Scene*

## **A subjective conclusion**

- **The hardware today is so powerful that the limitations are in our minds.**
- **At a point the two curves “What is it possible to make?” and “What would we like to make” cross each other.**  
*(But the wrapping became more important than content)*
- **That happened a while back.**
- **That day demos became a form of art.**

# *The Present Scene*

## **Spin-offs & side effects**

- **A lot of people working professionally**
  - Typically in the game industry.
  - Educated “by the scene”.
- **A new type of graphical language**
- **New types of music**
  - The 8-bit *genre* has it's commercial break-through now.
  - Underground music - The Commodore 64 Remix scene.

# *The Future Scene*

## **What is going to happen now?**

- **The old computers will be abandoned**
  - Commodore 64 and Amiga demos are thinning out. Demo groups still fight to keep them alive, but the spectators do not have the computers anymore.
- ***“Keep the Scene Spirit Alive!”***
  - Will The Scene die? An everlasting and always discussed topic. 20% think it will do so soon.

# *The Present Scene*

## **Case study: “South Party”**

- **We wanted to tell a funny story**
- **We were fascinated by South Park**
- **SP was made in A|W's *Poweranimator***
  - **Raytraced**, which takes forever (1 hour per frame).
  - **Hand-animated**, which takes forever.
  - Comedy Central had **50 people** or so working full-time.
- **Two months of spare-time to make our WiLD!demo... So what to do??**

# *The Present Scene*

## **Case study: “South Party” (2)**

- **Had to make our own render-engine.**
  - Written in C++, rendering speed ~ 50 fps (PAL).
- **We wanted to animate via scripts.**
  - Script-interpreter, “*Manuscript*”, written in C++.
- **We wanted lip-sync to be good**
  - If you want your characters to be *alive*, this is essential.
  - A “.wav -> .snc”-program was produced, in C++.

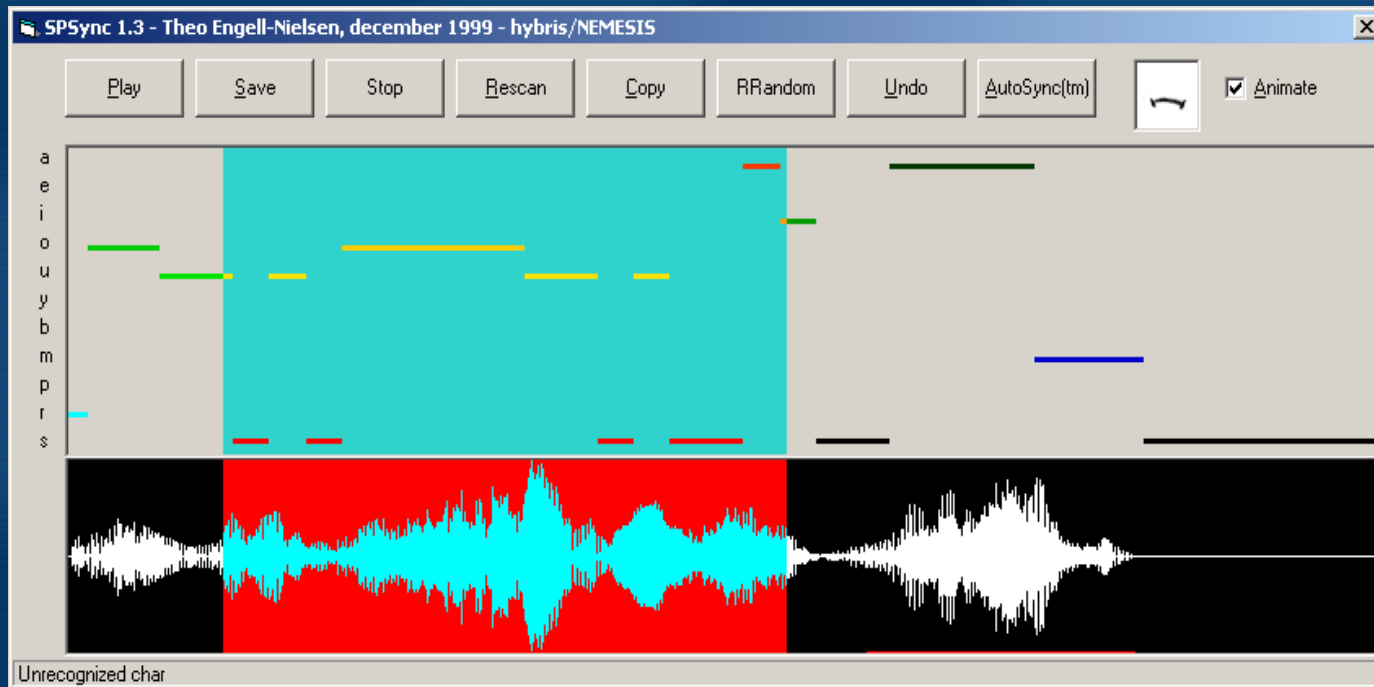
# *The Present Scene*

## **Case study: “South Party” (3)**

- **A manuscript was produced (33Kb).**
- **This was split up in scenes and parts**
  - What is essential to tell the story.
  - Funny scenes and details - it must be fun to make demos.
  - The rest - our darlings to kill.
- **Lines were recorded during two days**
  - These were lip-sync'ed in 4 hours using “*SPSync*”.
- **Characters were made in Photoshop**
  - and put together in our “*SP Character-editor*”.

# *The Present Scene*

## **Case study: “South Party” (4)**

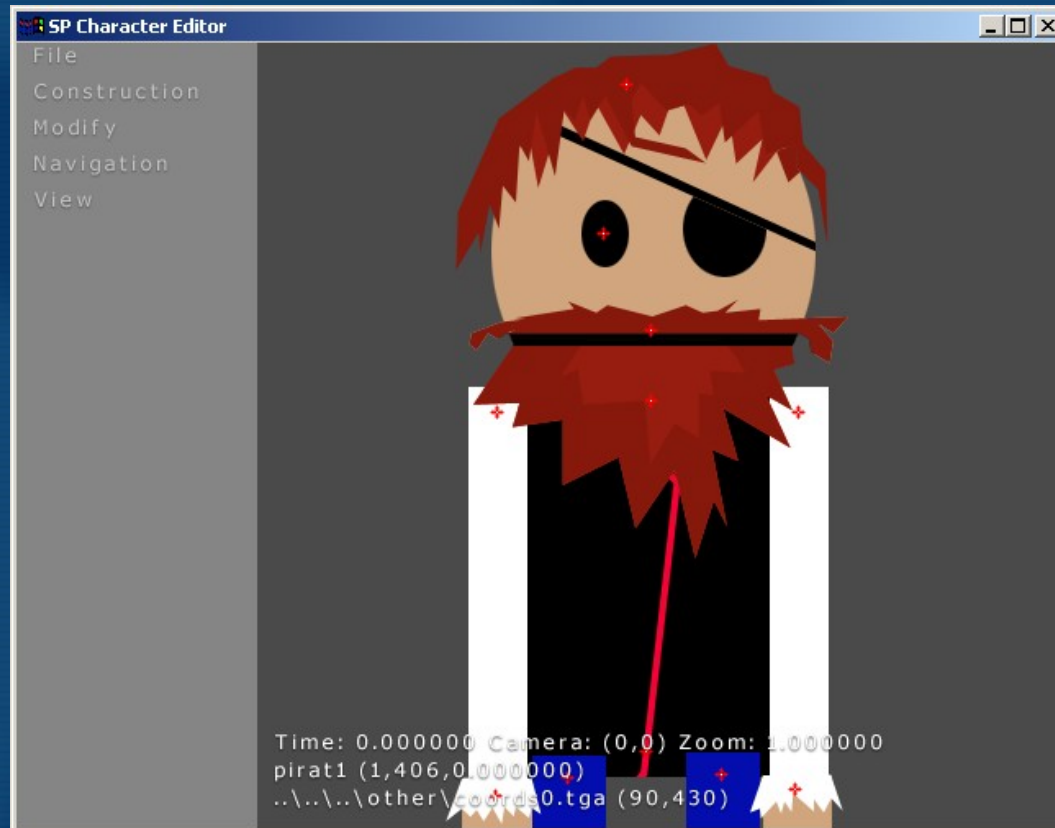


*SPSync - easy and very fast to produce usable results*

**DEMO TIME!**

# *The Present Scene*

## **Case study: “South Party” (5)**



*“SP Character editor” - hierachy editing of construction paper.*

# The Present Scene

## Case study: “South Party” (6)

- Manuscript converted to

“Manuscript”

```
\#include "..\graphics\characters\pirate1\pirate1.manus"
\#include "..\graphics\characters\pirate2\pirate2.manus"
Pirate#1 enters (original script)
    \pirate1 key position (manuscript)
    \pirate1 loop canadian-walk 3:0
    \wait 3:0
    \pirate1 position -457 0 100
    \wait 0:12

Pirate#1 says "I am Long John Silver. Ho ho ho and a bottle of rum!"
    \sound "..\speaks\pirate1.wav"
    \pirate1 syncfile "..\speaks\pirate1.snc" canadian
    \wait pirate1 sync

Pirate#2 enters. Pirate#1 looks at pirate#2.
    \marker pirate2 ind
    \pirate2 key position
    \pirate2 loop canadian-walk 2:0
    \wait 2:0
    \pirate2 position -142 0 200
```

*“Manuscript” - an example*

# *The Present Scene*

## **Case study: “South Party” (7)**

- Then the scenes were put through *SPRender* that outputs images and .wav's.
- Put those into *Premiere*, add some sound effects, press CTRL-M and you are done!
- We (a group of five) produced 17 minutes of animation in only 3 weeks (*not including the one month spare time coding...*)
- A tough ride, but it was fun
- We won!

# *The Present Scene*

## **Case study: “South Party” (8)**



*A clip from “South Party”, WiLD!demo winner at The Party 1999*

# *The Present Scene*

## **Case study: “South Party” (9)**

- **A few comments about demo making**
  - The production phase
    - It's fun - in the beginning.
    - It soon becomes boring.
    - After a week you hate it. It becomes tedious.
    - After two weeks you really hate it. Now very tedious.
  - In hybris/NEMESIS we produce while being together!
    - Everybody works for free.
    - You *have* to know human factors, or you're doomed!

*The Present Scene*

**Oh - I almost forgot “Pixor 2”**



# *The Present Scene*

## **Links and references**

<http://www.scene.org/> (all new demos are here first)

<http://www.ojuice.net/> (news and scener info)

<http://www.pouet.net/> (forums for each demo)

### **Selfpromovation:**

<http://www.hybrisNEMESIS.com/>

<http://www.PRESSPLAYONTAPE.com/>

# *The Present Scene*

## **The end of my talk**

**Thanks for your attention**

*Psst! Keep the Scene Spirit Alive!*

